

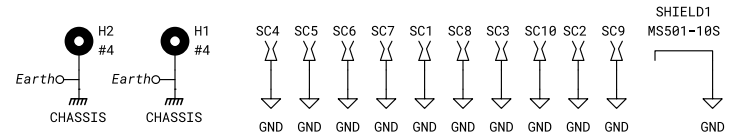
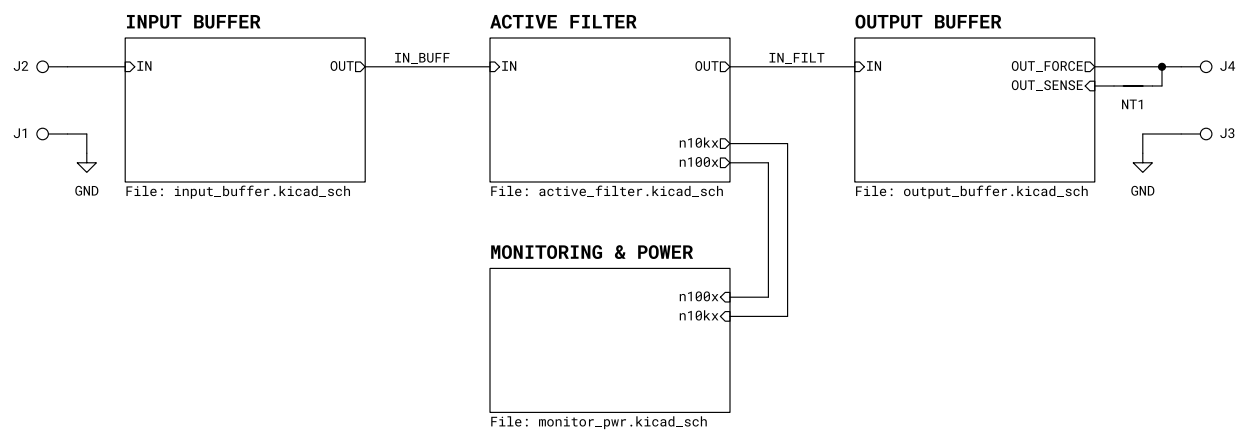
PRECISION ACTIVE REFERENCE FILTER (PARF)

THIS ACTIVE FILTER IS A DC-ACCURATE SINGLE-POLE 15mHZ LOW PASS FILTER. THIS WILL DRASTICALLY IMPROVE 0.1HZ+ NOISE MEASUREMENTS OF A VOLTAGE REFERENCE, BUT NOISE BELOW 15mHz IS NOT ATTENUATED.

THE GOAL WAS TO MAINTAIN LONG-TERM DC PERFORMANCE WHILE REDUCING SOME NOISE.

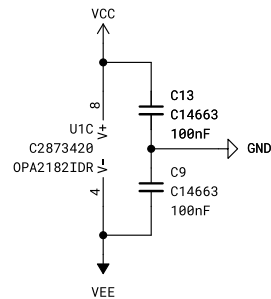
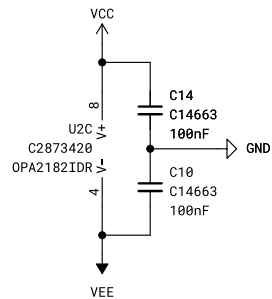
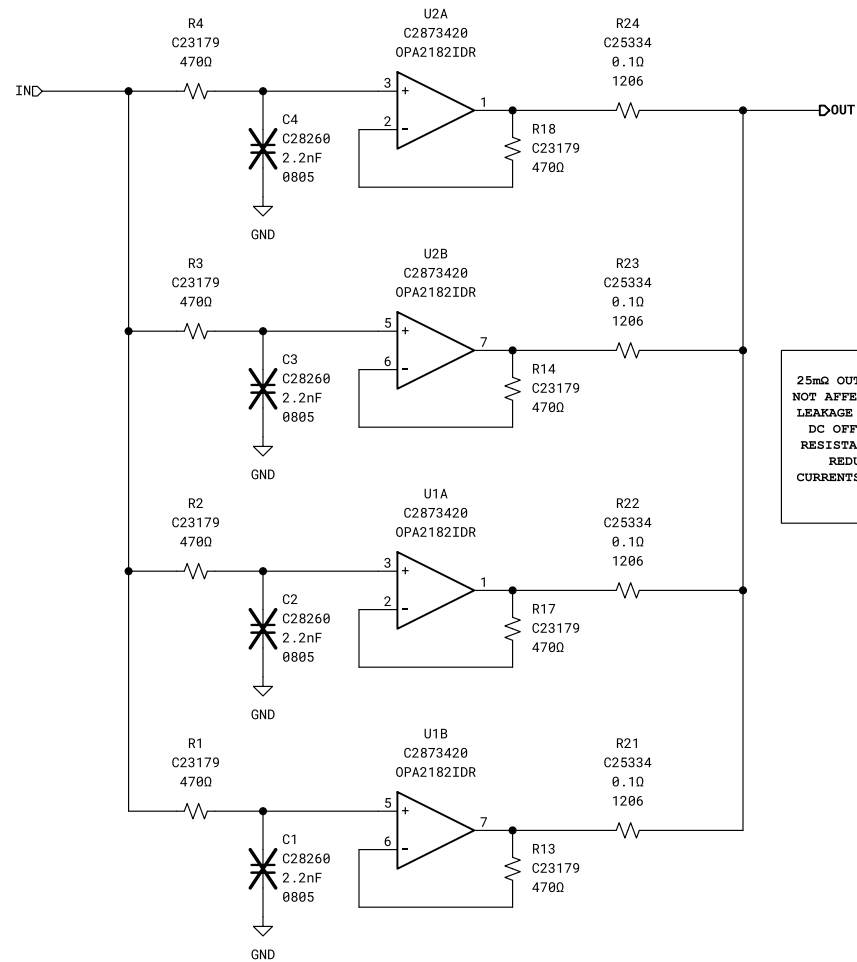
THIS FILTER MAY BE USEFUL WHEN SAMPLE TIMES ARE SIGNIFICANTLY LESS THAN 10sec, ESPECIALLY SCANNING OPERATIONS. A PRIME EXAMPLE WOULD BE RATIONOMETRIC COMPARISONS BETWEEN 2+ MEASUREMENTS. WITH THIS FILTER THE REFERENCE VOLTAGE WILL BE MORE STABLE BETWEEN SAMPLES IF THEY ARE << 10sec APART COMPARED TO THE UN-FILTERED REFERENCE.

THIS FILTER IS ALSO USEFUL FOR CHALLENGING DESIGNERS TO BUILD MORE SUB 0.1Hz LNA's! ;)



Title: PRECISION ACTIVE REFERENCE FILTER (PARF)		
Tyler Richard		
Sheet: /		
File: PARF_X1.kicad_sch		
Size: USLetter	Date:	Rev: X1
KiCad E.D.A. 8.0.3	Id: 1/5	

PARF - INPUT BUFFER



Title: PARF, INPUT BUFFER

Tyler Richard

Sheet: /INPUT BUFFER/

File: input_buffer.kicad_sch

Size: USLetter

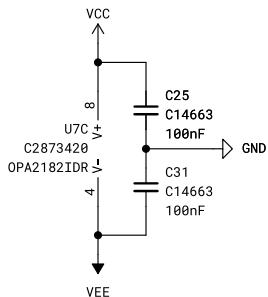
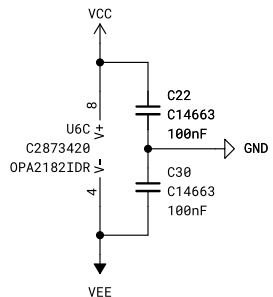
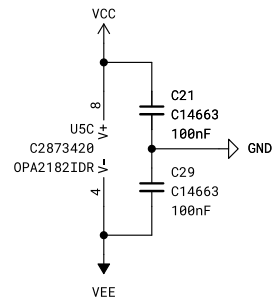
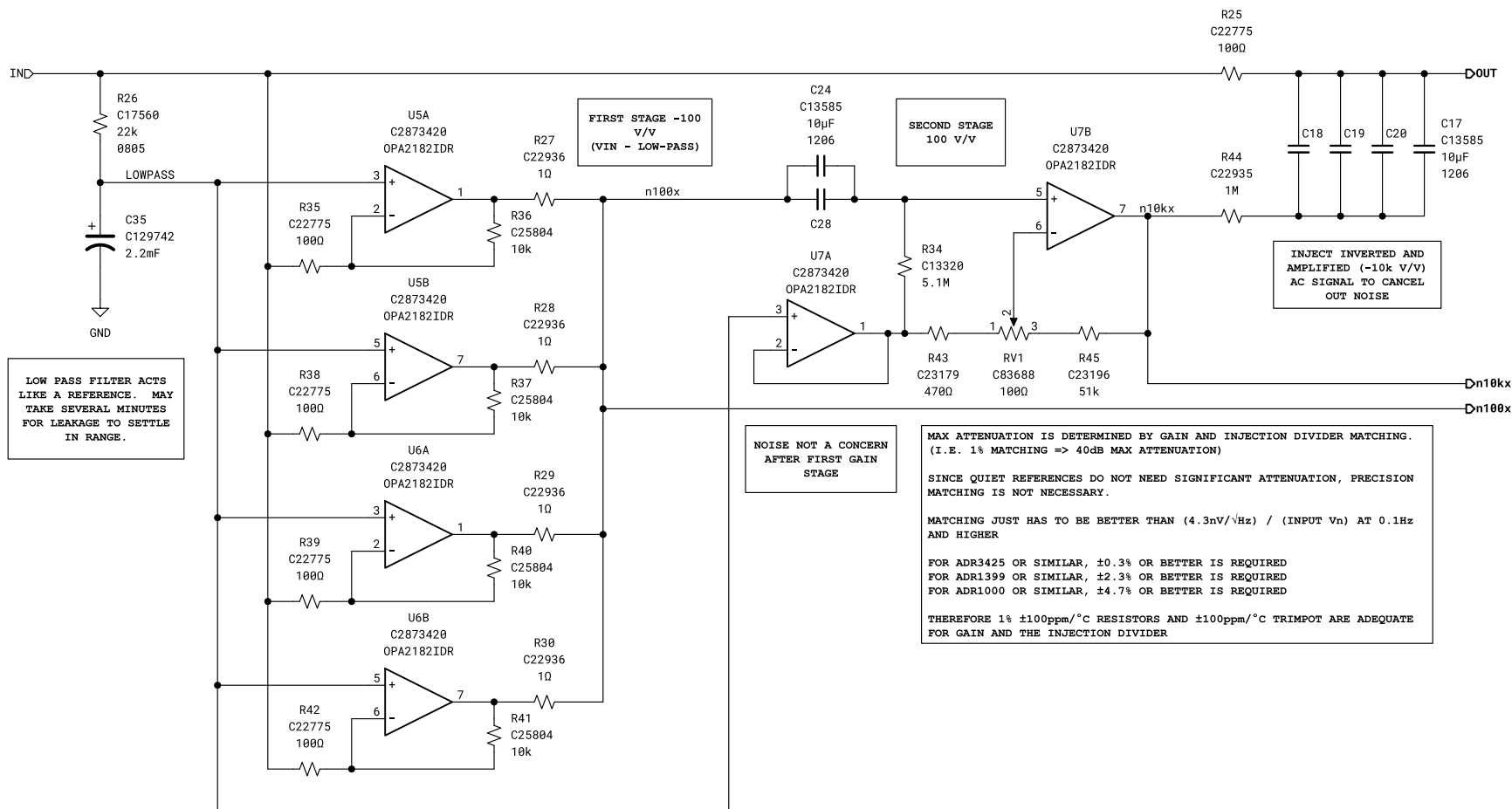
Date:

Rev: X1

KiCad E.D.A. 8.0.3

Id: 2/5

PARF - ACTIVE FILTER



Title: PARF, ACTIVE FILTER

Tyler Richard

Sheet: /ACTIVE FILTER/

File: active_filter.kicad_sch

Size: USLetter

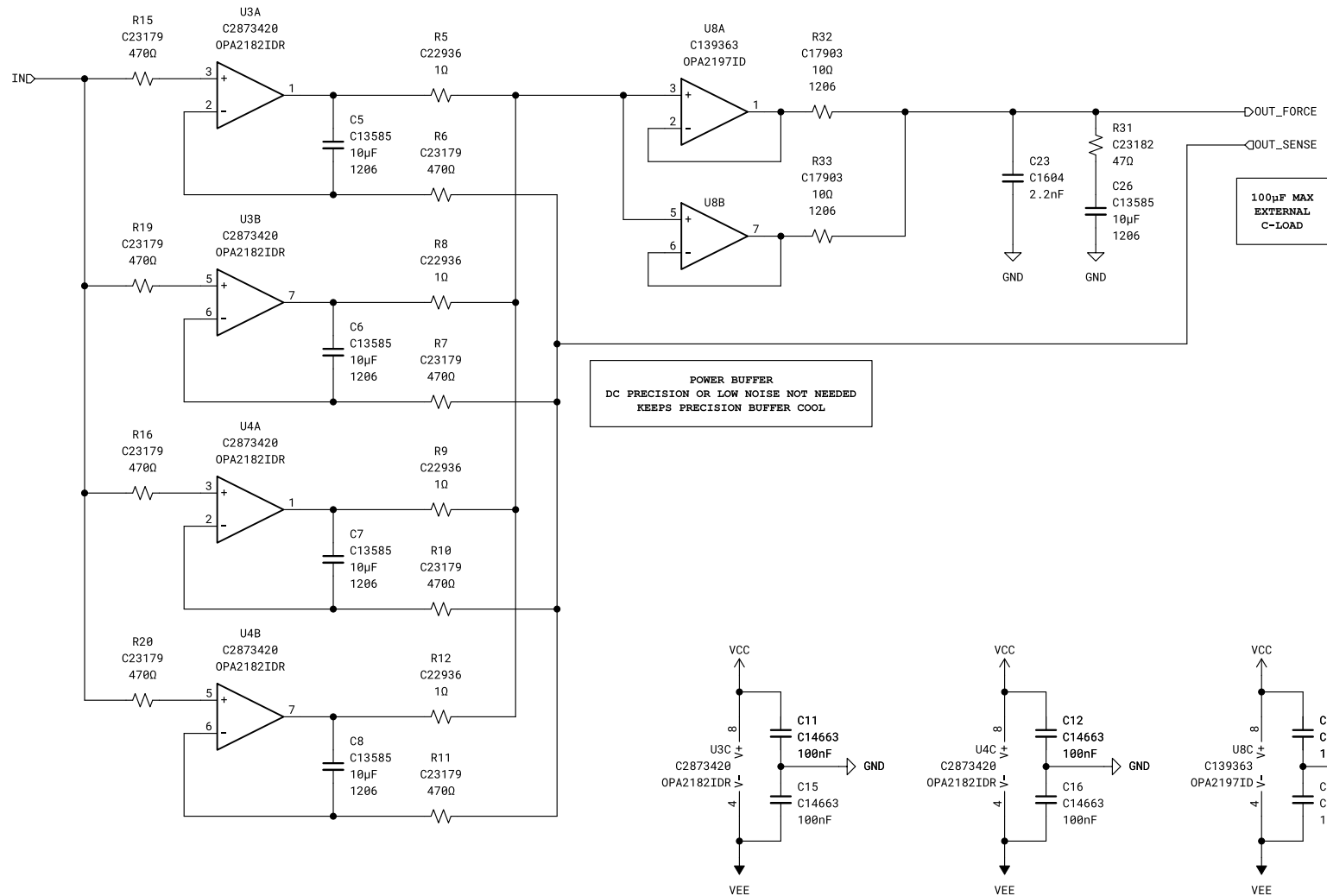
Date:

Rev: X1

KiCad E.D.A. 8.0.3

Id: 3/5

PARF - OUTPUT BUFFER



Title: PARF, OUTPUT BUFFER

Tyler Richard

Sheet: /OUTPUT BUFFER/

File: output_buffer.kicad_sch

Size: USLetter

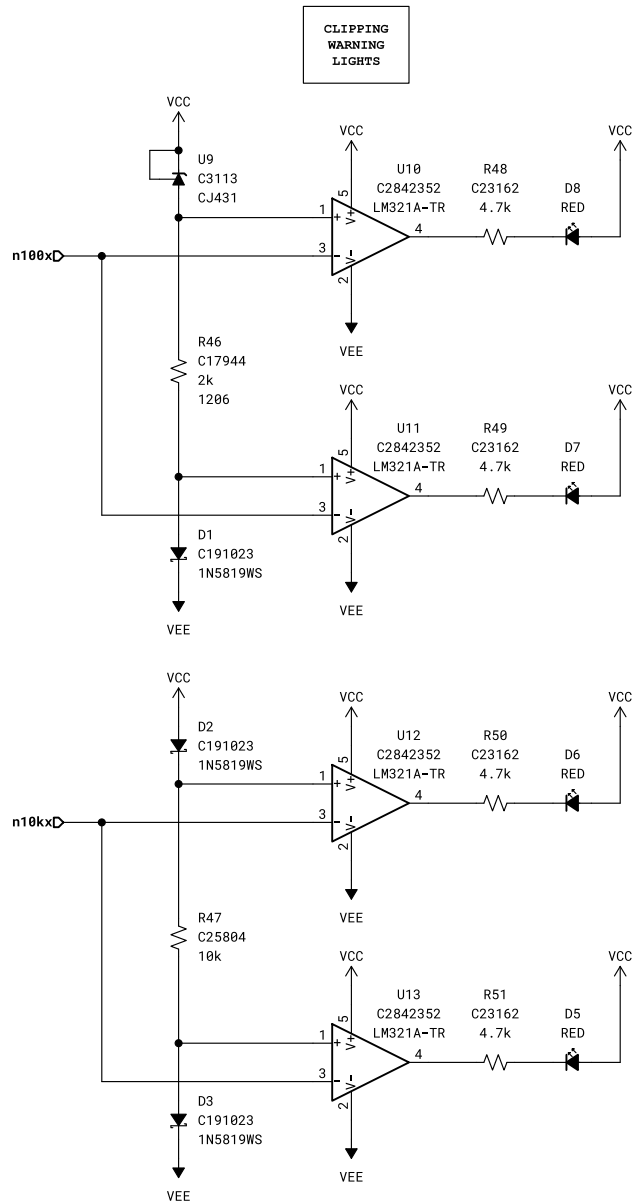
Date:

Rev: X1

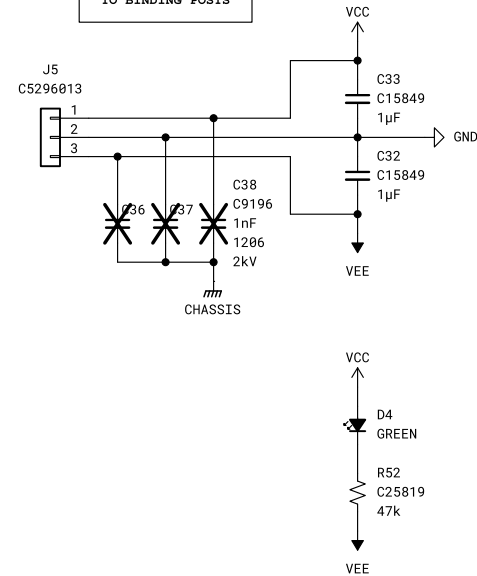
KiCad E.D.A. 8.0.3

Id: 4/5

PARF – MONITORING AND POWER



USE NANOCRYSTALLINE
CMC ON POWER CABLE
TO BINDING POSTS



POWER INPUT
REQUIREMENTS:
 $(VCC - VEE) \leq 36V$
 $(VCC - V_{in}) \geq 3V$
 $(V_{in} - VEE) \geq 3V$
SINGLE SUPPLY OK, TIE VEE TO GND.
VEE \geq GND TECHNICALLY OK

Title: PARF, MONITORING AND POWER

Tyler Richard

Sheet: /MONITORING & POWER/

File: monitor_pwr.kicad_sch

Size: USLetter

Date:

Rev: X1

KiCad E.D.A. 8.0.3

Id: 5/5